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25 MAY 1956

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The Honorable Arthur S. Flemming
The Director, Office of Defense Mobilization
Executive Office Building
Washington, D. C.

Dear Dr. Flemming:

I refer to your inquiry of 15 May 1956 to Mr. Dulles concerning titanium production in the USSR and the Satellites.

I appreciate your requirement for information on titanium metal production and use in the Soviet Bloc. A review of Soviet policy regarding nonferrous metals, of which titanium is one, reveals that the Council of Ministers has declared information on reserves and extraction of all nonferrous metals to be "a state secret, the divulgence of which is punishable by law." (Izvestiya, 10 June 1947) This policy has actually been in effective operation since the mid-1930's. The result is that the Soviets have released no information on the status of its titanium industry, and only recently have released scientific publications dealing with the theoretical aspects of the metal. In the directives of the Communist Party of the Soviet Union on the Sixth Five-Year Plan objectives, the only reference made to titanium is that "prospected deposits" are to be "increased 40 - 45 percent." Mr. Khrushchev in a speech to the 20th Party Congress on 14 February 1956 mentioned that, in the next ten years, production of titanium, along with aluminum and magnesium, is to be developed in Siberia. These references shed very little light on the question of Soviet production and use of titanium metal.

Although the USSR has a few deposits of rutile, the only commercially important titanium mineral used for making titanium metal, it has extensive deposits of ilmenite, a very low-grade source of titanium, in the Urals area. Other large ilmenite deposits have been discovered near Kirovsk on the Kola Peninsula and near Mariupol' in the Southern Ukraine. The total deposits are reported to contain 400 million tons of available ore. No important titanium deposits are known to have been discovered in any of its satellites.

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The American Metal Market statement, issue of 27 January 1956, that Soviet Russia may be producing 90,000 to 95,000 tons of titanium annually has been traced to a source in the U. S. Bureau of Mines. The basis for the statement is the theoretical quantity of titanium that could be extracted from the titaniferous iron ore (ilmenite) mined in the Urals area. A Soviet metallurgical journal, published in 1934, states that the ilmenite contains 54 percent iron, 14 percent titanium dioxide, and 0.6 percent vanadium pentoxide. The costs of processing such lean and refractory ore for its titanium content would be excessively high based on U. S. experience.

Since 1952, several articles on titanium have appeared in Soviet scientific publications. Among them is an article by I. I. Kornilov, "Titanium, Its Properties, Application, and Methods of Preparation," in Uspekhi Khimii (Progress of Chemistry), Vol. XXIII, No. 5, 1954. Another article by Kornilov, Solubility of Chemical Elements in Titanium, was published in the May - June 1954 issue of Izvestiya Akademii Nauk (Bulletin of the Academy of Sciences). Published in Izvestiya Akademii Nauk SSSR, Otdel. Tekh. Nauk (Bulletin of the Academy of Sciences USSR, Division of Technical Sciences), No. 3, 1954, is an article by L. N. Fokeiev, V. P. Yelyutin, and V. I. Zalessky, "Research into the Plastic Properties of Technical Titanium." Kornilov's bibliography, incidentally, consists almost exclusively of reference materials of U. S. or other Free World origin. It is quite apparent from these titles and all other available literature that the Soviets are engaged in research on titanium metal, but such sources contain no information indicating that they are in fact extracting any of the titanium contained in their ilmenite or any other ores. Moreover, no evidence of the use of titanium metal in Soviet aircraft or in any other application has been found.

There is no evidence from any source, classified or unclassified, that the Soviet Bloc is producing titanium metal on a commercial scale. High priority collection requirements for evidence of Soviet use of titanium metal have not resulted in any indication of successful application of titanium metal or titanium-base alloy.

In recognition of the seriousness of the situation resulting from the paucity of information on titanium production and use in the Soviet Bloc, this Agency convened a meeting of titanium specialists from various other interested Government agencies. The consensus of the group was that there existed a Government-wide shortage of information on Soviet titanium developments.

It was also unanimously agreed that the extreme degree of secrecy covering titanium information reflects the importance placed on titanium by the Soviets.

This letter will constitute an interim report and if, by 1 August, new information has come to our attention, a supplement will be submitted to you. At the end of the year we shall furnish as complete a report on titanium production in the Soviet Bloc as our information will permit.

Sincerely,

SIGNED

C. P. Cabell
Lieutenant General, USAF
Acting Director

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF DEFENSE MOBILIZATION
WASHINGTON 25, D. C.

OFFICE OF THE DIRECTOR

MAY 15 1956

Honorable Allen W. Dulles
Director
Central Intelligence Agency
Washington, D. C.

Dear Mr. Dulles:

In connection with our national program on titanium we frequently feel the need of knowing more concerning the nature and extent of the progress being made by the U.S.S.R. and satellites in the same field.

Accordingly, we would very much appreciate a study and report from you as to the titanium situation in the U.S.S.R., particularly as regards sources, the production status and trend, the quality of the products, and principal uses.

I realize that this is a "large order" but believe the usefulness of the information will much more than justify the effort.

Would it be possible to have an interim report by August 1 and a more extensive report by the end of this year?

Sincerely yours,

Arthur S. Flemming
Director

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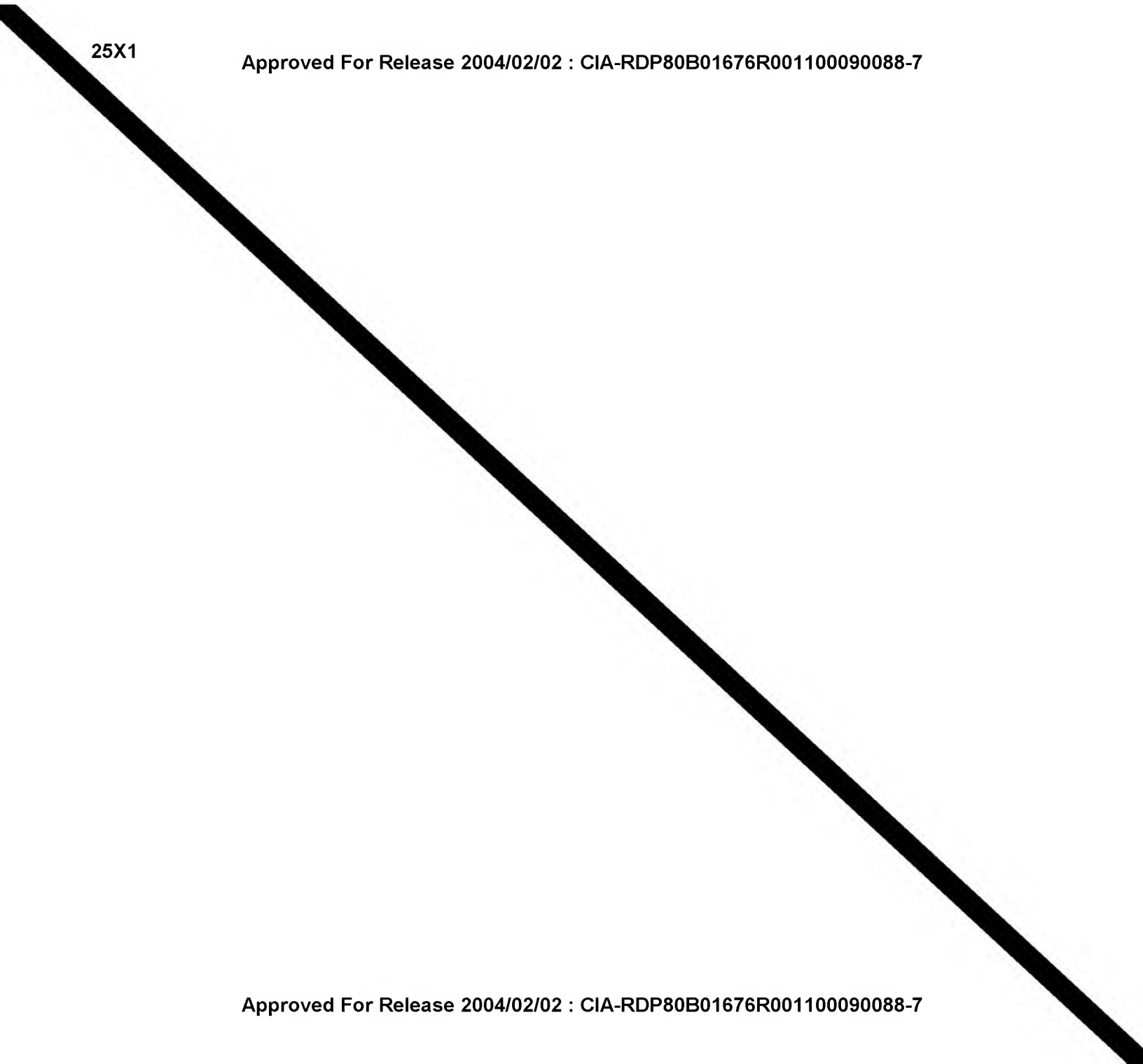

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